

Submission to Honey Bee Industry Inquiry

by

Lloyd Hancock

I would like to make a personal submission to this inquiry as a hobby beekeeper who is a member of a beekeepers club. The opinions expressed are mine.

1 *Its current and future prospects*

Honey production precedes our written history. The present bee keeping systems were developed about 150 years ago. There is an exchange of beekeeping techniques throughout the world and any new good ideas are speedily adopted and applied by the Australian industry whether they originate locally or in some other country. The Australian industry compares favorably with the industry in other countries but we do not have the back up of research and development which is occurring elsewhere. This is frustrating when we have the skills to be employed but lack funding to get innovative ideas developed.

Honey Production depends on the quality characteristics of the bees, the availability of nectar and pollen and the effects of pests and disease on the hive. The economics depend on production costs the main ones being the capital cost of the bee hives, frames, foundation wax; the cost of transporting bees from site to site, inspection costs to check hives for diseases and when to rob, harvesting honey including transporting full frames of honey to the extraction facility and then returning the extracted frames "stickies" back to the hive. Once the honey is extracted from the frames it is filtered, packed and transported to the packers. The packers have costs of processing, packaging and marketing.

There is another aspect associated with honey production and that is the associated products bees wax, pollen, royal jelly and propolis.

The industry also includes contract pollination and the production of queen bees

To consider the present and future states of the industry I propose to examine each section comparing present practices and suggesting future alternatives.

The amount of honey which any hive can gather has many factors influenced by management practices but the characteristics of the queen bee play a very big part in the success of the hive. The queen can influence the strength of the hive by the number of eggs she lays, her temperament will determine how aggressive the hive is which affects how much honey will be gathered and how the hive is defended against other insects.

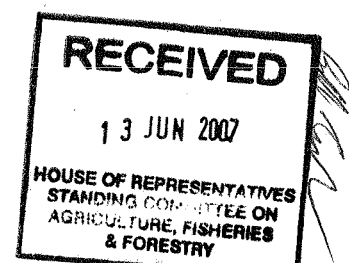
Queen bee producers establish their reputations by the quality of their queens they produce. They rely on their own extensive experience and some provide mated queens via Artificial Insemination techniques.

I think this is one of the areas in which developments in one area of science could be applied to another area and produce some very worth while results. If you think about it, in the last few years there has been incredible developments in science. Understanding gene technology, the ability to analyze DNA, in molecular biology, the ability to see via electron microscopes and a host of other technologies are but a few. Could not these developments be applied to the selection and breeding of queen bees and a better understanding of bee diseases, bee pests ie the small hive beetle, the Varroa mite. Due to funding and other priorities this work is being hampered in Qld.

My understanding is that the DPI have reduced the field and research staff associated with the bee industry over the years and are now very light staffed.

RECOMMENDATION 1

That funding be available to employ scientists and provide facilities for them to apply modern scientific technologies to improving queen breeding, honey production, and problems with pests such as the small beetle, black ants and other pests



The availability of flora is a big factor. Other submissions have discussed the problems of access to forests and I support the view that the industry need continuing access to the forests. One argument that honey bees destroy the native bees is by my observations false. They can exist together and I have see native bees and honey bees on the same flower ignoring each other. I realize that there are many different species of native bees but the experience of some members of our bee club who breed and keep native bees is that they coexist happily.

RECOMMENDATION 2

Governments review earlier decisions to exclude honey bees from forest areas

The present method of looking after bees usually involves long trips to inspect and when the frames are ready for extraction they are returned to the extraction plant and then returned to the hives. This journeying and transporting frames back and forth adds costs to honey production. Some applied technologies are being tested whereby the hives are monitored remotely and information about the weight of the hive is sent back to base by mobile phone. With developments in technology it will be interesting to see if the advances in medical remote laproscopy could be applied to examine the interior of a hive so regular inspections could be made on the activities of the queen, the presence of pests, the state of the hives. If techniques like these worked it could save costs of transport to the site, the time to dismantle the hive and would enable the presence of any unwanted or introduced pests to be detected earlier. That is between regular visits which could be weeks apart.

Extracting vans with facilities up to health standards which are capable of extracting honey near the hives would save costs of transporting full frames of honey to extracting plants and be returning extracted frames back to the hives. The concept of having "contract harvesters or honey extracting harvesters" is not viable at the moment but could be a future economic concept if the harvesting were linked to the honey packers. That is the beekeepers would pass the responsibility and costs of harvesting on to the packers. The packers would go to the field extract the honey, pay the beekeepers a price on honey extracted plus the by products, beeswax etc. The bee keeper would reduce their responsibilities simply to getting the best production out of the bees and develop other services such as supplying hive for pollination both locally and for export. Obviously in sites not suitable for the extracting vans the frames of honey would need to be transported a short distance to a suite suitable for a van.

It is interesting to note that in the Qld Governments submission to this inquiry (page 7) that the value of the production of bees "other products" including queen rearing and bees wax is more than the honey production in Qld. The "contracting harvesting" of the wax which if done on a bigger scale and more efficiently could add to beekeeper returns.

RECOMMENDATION 3

Development funds be made available to develop remote monitoring of hives and to trial the concept of mobile extracting facilities of honey and other bee products. The practical and economic benefits should be studied over three years.

2 Its role in agriculture and forestry

The committee in its discussion paper suggested research was needed into the effects of honey bees in National parks and the interaction of honey bees with native species. Another submission to this inquiry discussed the use of native bees as an alternative source of pollinators in the event that the honey bees should be decimated by the introduction of the Verroa mite or some other cause.

My limited observations indicate that with some crops like Macadamia, the honey bee is not as good a pollinator as native bees. Research should be conducted to study the interaction of native

species and the honey bee and also the efficiency of each in pollinating different crops. To get the best pollination results would be of great commercial benefit to farmers.

RECOMMENDATION 4

Research funding be made available for studies into the interaction of native bee species and the honey bee. Research funding also be available for the study of the best pollinators of various commercial crops comparing honey bees with different varieties of native bees.

3 Biosecurity Issues

The necessity of maintaining vigilance to prevent the import of Verroa and other pests is recognized in the committees discussion paper and few would disagree with it.

Whilst the use of sentinel hive is recognized there need to be wider monitoring so that if pests slip past the sentinel hive the extent of the incursion is accurately determined.

I would like to draw the committees attention to the role of bee keeping clubs or associations and the part they may play in a wider monitoring role. My own experience is based on my membership of the Ipswich and West Moreton Beekeeping Association. Other Associations may be more or less active. There are approximately 70 members . Many are amateurs (hobbyists) from all types of professions and occupations, there are some members who are professional honey producers, some queen bee breeders, some who have native bees, some are producers of beekeeping equipment, some research scientists. Some of our members are recognized world authorities who attend international bee conferences (Apimonda) regularly. The club meets monthly, it has an extensive library including the latest publications from overseas bee journals, it runs beekeeping courses for students at a nearby school, it regularly conducts field days showing latest equipment and has lectures from leading bee experts including Qld Dept of Primary Industry bee personell, it shows honey in local and state shows, it promotes interest in bees and honey products by donating bee books to local school libraries, it has available for hire a van equipped to the latest health standards for extracting honey, it conducts training courses related to the beekeeping industry. At its meetings ideas are exchanged, problems discussed and there is an interchange of club magazines between other similar organizations. Some of our members are also members of the Qld Beekeeping Assn and the Australian bodies. One of our members is called by AQIS to handle bees found on incoming ships.

I think it fair to say that we are a fairly active and involved club.

One of the advantages of being a hobbyist is that one has a smaller number of hives than a larger operator , usually the hives are located in one spot and because we have fewer hives we have the opportunity to examine our hives more regularly than a a larger operator. A larger operator does not have time to look at all his hives frequently.

Examining hives closely to inspect them is time consuming since one has to remove the upper boxes (called supers) from the hive to get to the frames on the lower levels and look at the queen bee, the brood cells and if inspecting for Verroa mite or other mites put some bees in a powder mixture so any mites can be absorbed in the powder and take samples to be sent back to a laboratory.

It would be in the national interest to have the widest possible surveillance for pests from all bee keepers. This is something we do but we only do this at our convenience . That is we only inspect when we are doing routine work on our bees.

From a national surveillance point of view inspections should be done on regular basis. Many of our experienced members are retired and would be prepared to do this this work. It would not be unreasonable for their expertise and expenses to be paid for this work. Reporting on a regular basis would incur additional costs beyond that which would be incurred with normal beekeeping activities. It may be possible to coordinate surveillance activities and reporting through Bee keeping Associations.

One fact I would like to comment on is that if there is a plan of action in the event of an incursion of the Varroa mite then it has not been passed down to our beekeeping Assn. I would have thought it would be essential to have a plan worked out in advance so people will know how to react rather than wait until the pest has spread beyond any control.

RECOMMENDATION 5

That a plan of action for incursion of pests (including mites) and diseases be made known to beekeeping Assns and that the government funds the inspection duties of beekeepers including hobbyists. Beekeeping Assns should be approached to assist.

4 Trade issues

The comments I wish to make on this subject is that products should be correctly labeled to show the country of origin of the honey. Recently Woolworths were selling honey marked “Packed in XYZ country (I think it was Denmark) from local and imported honey”. This refers to honey imported into the country where packing occurred. Labels should show, “Honey produced in ABC country and packed in DEF country” or “Honey produced and packed in XYZ country”.

I would also wish to see that the word “honey” is strictly reserved for honey produced by bees. I understand that in the USA there are “honey like” products produced from maize which are marketed as a “honey”

5 Impact of land management and bushfires

These matters are covered in other submissions. It is crucial that beekeeping is allowed to continue operating on forestry land. I am appalled that bees will be excluded from these areas.

6 The research and development needs of the industry

Research needs to be done in several areas:-

- A Bee Equipment and processing
- B Bee research including Pollination, Diseases and Pest control
- C Bee and honey research and product development.

- A Bee equipment and processing

Many years ago the links between CSIRO and industry would have been an ideal way for this type of work to be carried out. There need to be a cooperation between practical innovative beekeepers and scientists/engineers who have access to measuring and design of electronic equipment and current equipment manufacturers

The types of projects which could be looked at include:- hive design, remote monitoring of hives for weight gain, pest control, extraction techniques, recovery and processing of other products wax, propolis, pollen, filtering and packing.

- B Bee research including pollination, disease and pest control.

Basic bee research on breeding, swarm prevention, maximum honey production , and pollination of the different types of bees both honey bee and native bees is essential both for understanding improvements in crop yields and the interaction of the honey bee on our forests.

Since Australian honeys are chemical free, research efforts should be undertaken to use methods to control pests and diseases which do not involve chemicals inside the hive. Often these can be very simple . I would draw the committees attention to the methods of baiting fruit flies developed by Prof. Drew of Griffith University. This simple technique of mixing small amounts of poison with protein and painting on to small squares of masonite nailed onto trees was one of the techniques

used to prevent the spread of the Papaya fruit fly incursion in 1995. The actions taken in this operation which eliminated the Papaya fruit fly from north Qld in about 40 months is regarded highly internationally. Together with the fire ant elimination in its final stages in Qld could provide a good model for attacking any incursions of the Verroa mite should it occur.

There should be work on baiting, the attractants using pheromones and with the advent of DNA and gene technology there should be work to determine how the pests and diseases can be destroyed by these techniques. Since many of these techniques will avoid the large use of chemicals, chemical companies will not be interested in doing this work. For a relatively small amount of funding there can be very good outcomes.

C Bee and honey research and product development

The future of the honey industry would be strengthened if there were more products. Since honey is a very ancient product there are many myths and folk tales about its properties and uses.

Medihoney is one example where modern science confirms and explains that the honey from Leprospernum plants actually works by reacting with the genes of the "golden staph" and cures the open infected wounds. This was shown on the ABC catylyst program. The doctors at Brisbane's Princess Alexandra Hospital worked in conjunction with scientists based elsewhere and the use of medihoney is accepted by recognized hospitals world wide. Without this research and patient trails no product can be accepted and used in hospitals.

Normally this type of research would not be funded by the usual medical research grants so any funds designated for this work would need to have very clear definitions as to how it is to be used. There are other "folk stories" about the benefits of honey.

Some say that when calcium supplements are eaten with honey the calcium is absorbed more readily into the body bones and this helps increase bone density. Reports from Purdue University seem to confirm this in rats.

Another is that honey and cinnamom help Arthritis and improve the bodies immune system and prevent colds.

While these "folk stories" need to be proved if they work or not there could be enormous benefits if research can confirm that they do. For example if elderly people could improve bone density with honey and calcium. This would prevent fractures and keep people out of hospitals and be a very inexpensive way to achieve this.

My point is that for a small amount of funding, research may open up new applications for honey

RECOMMENDATION 6

That monies be made available for research into the three areas mentioned above.

A Bee Equipment and processing

B Bee research including Pollination, Diseases and Pest control

C Bee and honey research and product development.

7 Existing industry and Government work that has been undertaken for the honey bee industry

The impression I get is that Departments of Primary Industries are more interested in making regulations than in helping industries grow. There have been major cutbacks in field staff to assist in all rural industries including the bee industry.

RECOMMENDATION 7

That Departments of Primary Industry be funded to increase the field and scientific officers associated with the Honey bee industry.